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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,463	12/05/2000	Werner Sievers	HOE97/F143	8152

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EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 09/10/2002

12

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/730,463	<b>Applicant(s)</b> SIEVERS ET AL.	
	<b>Examiner</b> Katarzyna W. Lee	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 July 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

In the light of the applicant's amendment, the following office action has been necessitated.

#### ***Abstract***

The examiner acknowledges new Abstract. However, per MPEP the Abstract of the invention has to be submitted on a separate sheet of paper.

#### ***112/101 Rejections***

With respect to applicant's argument to the rejection under 101 paragraph, the examiner would like to point out that this rejection is statutory. The patent office has no discretion to wave the statute. Terms such as "Use of..." are not acceptable language and have to be corrected. Good example is a "Method of using..."

In view of the applicant's amendment, which corrected most of the 112 issues only the rejections of record are not overcome and are incorporated here by reference.

***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 3, 7 and 8 rejected under 35 U.S.C. 102(b) as being anticipated by Hammer (US 5,824,622).

The discussion of the disclosure of the prior art of Hammer from paragraph 10 of the previous office action is incorporated here by reference.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (US 5,824,622) in view of Jensen (US 5,795,556).

The discussion of the disclosure of the prior art of Harmer and Jensen from paragraph 14 of the previous office action are incorporated here by reference.

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5. Claims 4, 6, 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (US 5,824,622) in view of Jansen (US 5,795,556) as applied to the claims above further in view of Geiss (US 5,948,314).

The discussion of the disclosure of the prior art of Harmer Geiss and Jansen from paragraph 15 of the previous office action is incorporated here by reference.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (US 5,824,622) in view of Pekala (US 5,086,085).

The discussion of the disclosure of the prior art of Harmer and Pekala from paragraph 16 of the previous office action is incorporated here by reference.

In the amendment filed on June 19, 2002 the applicant argued the following:

1) The present invention is not anticipated by Harmer. The examiner has not provided evidence to support the assertion that the process is inherent.

With respect to the above argument, the examiner would like to point out that the claim 1 recites the following:

Process for the production of the material with interpenetrating organic and inorganic networks on a scale of no more than 100 nm by:

(1) Mixing aqueous solution or dispersion of organic polymers, polymer precursors or mixture thereof, which are capable of forming polymer networks in an aqueous phase with silicon dioxide

(2) changing pH and/thermally treating the aqueous solution or dispersion to form gel consisting of interpenetrating network and silica gel network, and

(3) drying the gel.

This claim reads on any type of polymer and any type of silicon compound known, wherein each polymer within itself forms a network.

The example 2 of the prior art of Harmer teaches the following:

(1) mixing a solution of perfluorinated resin in lower alcohol and water with silicon compound

(2) changing pH of the solution to form a gel, and

(3) drying the gel.

The resulting product was highly porous, wherein the pore size was on a scale of 8.3 nm. The process steps of the prior art of Harmer are exactly the same steps as those in the present invention. There is no mentioned in the example, that the polymer has been removed, therefore there is no evidence for that particular example, that it is only a metal oxide composite. Therefore formation of the interpenetrating network is inherent. Since the applicant has not limited its claims to either more particular polymer or source of silicon compound, the rejection of record still stands.

2) The prior art of Harmer discloses microcomposites whereas the present invention requires network less than 100 nm.

With respect to the above argument, since the pore size of the composite of the prior art of Harmer is 8.3 nm, then it cannot be microcomposite.

3) The prior art of Harmer teaches only metal oxide network.

Just like in argument, 1, example 2 does not show support or evidence, that the polymer component is removed from the sol-gel process.

4) There is no suggestion or motivation to combine Jansen with Harmer and that Jansen fails to cure deficiencies of Harmer.

With respect to the above argument, the examiner disagrees. Both the prior art of Harmer and that of Jansen are utilized to form gels. Therefore combination of the two processes, each of which is utilized to make gel is in itself prima facie obvious.

5) The prior art of Harmer does not teach claim 5, which is replacement of water by organic solvent. Examiner has not provided the evidence.

The prior art of Harmer was not utilized to reject claim 5, but the prior art of Jansen was. The examiner does not understand the reason for that statement.

6) The prior art of Harmer does not teach the requirements of claim 9, which is forming an aerogel in a scale of less than 100 nm. Examiner has not provided the evidence.

The prior art of Harmer was not utilized to reject claim 5, but the prior art of Jansen was. The examiner does not understand the reason for that statement.

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7) The prior art of Harmer does not teach claim 10, which is use of gel composite as an insulation, barrier and the like. The examiner has not provided the evidence.

The prior art of Harmer was not utilized to reject claim 5, but the prior art of Jansen was. The examiner does not understand the reason for that statement.

8) There is no teaching or suggestion to combine Harmer, Jansen and Geiss to teach interpenetrating network of the present invention.

See answer to the argument 4.

9) Harmer fails to teach interpenetrating network on the scale of 100 nm or less with respect to fillers, composite being calcined and wherein the composite has density of no more than 0.6 g/cm<sup>3</sup>.

The prior art of Harmer was not utilized to reject dependent claims reciting above limitations.

10) Harmer fails to teach composite utilized in medical diagnostics.

The prior art of Harmer was not utilized to reject dependent claim reciting above limitation.

11) It is not obvious to utilize melamine-formaldehyde polymer of Pekala in the composition of Harmer.



With respect to the above argument, the examiner disagrees. The prior art of Pekala and Harmer disclose formation of gels. It would have been obvious to one having ordinary skill in the art to utilize the polymer of Pekala in the composition of Harmer, since the polymer of Pekala forms a gel. It would have been obvious that the polymer of Pekala would still form a gel when utilized in the composition of Harmer absent unexpected results.

The examiner would like to invite the applicant to interview in order to further advance the prosecution of the case.

***Priority Documents***

As it was stated in the previous office action, the applicant has yet to provide certified copies of the prior art documents. Such documents have to be provided.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna W. Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

KIWL  
September 3, 2002

EDWARD J. CAIN  
PRIMARY EXAMINER  
GROUP 1500

